

## CLAIMS

1. A composite roll bearing, comprising:

a first race ring having a circular inner peripheral surface and end-surface portions that are linked to both ends of the circular inner peripheral surface;

a second race ring formed with a groove-shaped cross-sectional portion having a first receiving surface that faces one of the end-surface portions at a specified interval, a second receiving surface that faces the other of the end-surface portions at a specified interval, and a third receiving surface that faces the circular inner peripheral surface at a specified interval;

a plurality of first rolling objects for thrust bearing that are installed in a first annular race for thrust bearing defined by one of the end-surface portions and the first receiving surface;

a plurality of second rolling objects for thrust bearing that are installed in a second annular race for thrust bearing defined by the other of the end-surface portions and the second receiving surface;

a plurality of third rolling objects for radial bearing that are installed in a third annular race for radial bearing defined by the circular inner peripheral surface and the third receiving surface;

a first retainer for thrust bearing that holds the first rolling objects in a rollable state in the first annular race;

a second retainer for thrust bearing that holds the

second rolling objects in a rollable state in the second annular race; and

third retainer portions for radial bearing that extend from the ends of the first retainer and the second retainer in the third annular race, and that hold the third rolling objects in a rollable state in this race.

2. The composite roll bearing according to claim 1, wherein the second race ring comprises:

a first annular member having an end surface on which the first receiving surface is formed;

a second annular member having an end surface on which the second receiving surface is formed; and

a third annular member that is coaxially sandwiched between the first annular member and the second annular member and that has a circular outer peripheral surface on which the third receiving surface is formed.

3. The composite roll bearing according to claim 1, wherein

the first and second retainers comprise holding holes for holding the first and second rolling objects in a rotatable state at fixed angular intervals along a circumferential direction.

4. The composite roll bearing according to claim 1, wherein

the third rolling objects are held between a distal end surface of the third retainer portion formed on the first retainer, and a distal end surface of the third retainer portion formed on the second retainer.

5. The composite roll bearing according to claim 1, wherein

the third retainer portion formed on the first retainer and the third retainer portion formed on the second retainer are linked together in a detachable state, and between these portions are formed holding holes for holding the third rolling objects in a rollable state at fixed angular intervals along a circumferential direction.

6. The composite roll bearing according to claim 1, wherein

the first, second, and third rolling objects are cylindrical rollers.

7. A composite roll bearing comprising:

a first race ring comprising a circular outer peripheral surface and end-surface portions that are linked to both ends of the circular outer peripheral surface;

a second race ring formed with a groove-shaped cross-sectional portion having a first receiving surface that faces one of the end-surface portions at specified intervals, a second receiving surface that faces the other of the end-

surface portions at specified intervals, and a third receiving surface that faces the circular outer peripheral surface at specified intervals;

a plurality of first rolling objects for thrust bearing that are installed in a first annular race for thrust bearing defined by one of the end-surface portions and the first receiving surface;

a plurality of second rolling objects for thrust bearing that are installed in a second annular race for thrust bearing defined by the other of the end-surface portions and the second receiving surface;

a plurality of third rolling objects for radial bearing that are installed in a third annular race for radial bearing defined by the circular outer peripheral surface and the third receiving surface;

a first retainer for thrust bearing that holds the first rolling objects in a rollable state in the first annular race;

a second retainer for thrust bearing that holds the second rolling objects in a rollable state in the second annular race; and

third retainer portions for radial bearing that extend from the ends of the first retainer and the second retainer in the third annular race, and that hold the third rolling objects in a rollable state in this race.

8. The composite roll bearing according to claim 7, wherein the second race ring comprises:

a first annular member having an end surface on which the first receiving surface is formed;

a second annular member having an end surface on which the second receiving surface is formed; and

a third annular member that is sandwiched coaxially between the first annular member and the second annular member and that has a circular inner peripheral surface on which the third receiving surface is formed.

9. The composite roll bearing according to claim 7, wherein

the first and second retainers comprise holding holes for holding the first and second rolling objects in a rotatable state at fixed angular intervals along a circumferential direction.

10. The composite roll bearing according to claim 7, wherein

the third rolling objects are held between the distal end surface of the third retainer portion formed on the first retainer, and the distal end surface of the third retainer portion formed on the second retainer.

11. The composite roll bearing according to claim 7, wherein

the third retainer portion formed on the first retainer and the third retainer portion formed on the second retainer

are linked together in a detachable state, and between these portions are formed holding holes for holding the third rolling objects in a rotatable state at fixed angular intervals along a circumferential direction.

12. The composite roll bearing according to claim 7, wherein

the first, second, and third rolling objects are cylindrical rollers.